Eastern Region, Area 3

Integrated Roadside Vegetation Management Plan

August 2007

Washington State
Department of Transportation
Maintenance and Operations Division

Summary

The Washington State Department of Transportation (WSDOT) manages approximately 995 miles of roadside right-of-way throughout Lincoln and Adams counties. This right-of-way is part of the state highway system including I-90, US-2, US-395, SR-25, SR-21 as well as a number of other state routes in the area. A map of state highways and routes in this area is attached or can be accessed at http://www.wsdot.wa.gov/maintenance/vegetation/default.htm.

As a landowner in this area, WSDOT is required to control all listed noxious weeds that occur on this right-of-way by state law (RCW 17.10 and 15.15.010). It is important for WSDOT to not only meet the legal requirements, but also to consider the needs and concerns of adjacent landowners in this area.

In order to better manage these roadsides, WSDOT is in the process of developing an Integrated Roadside Vegetation Management Plan (IRVM) for this area. This plan will serve as the primary guidance document for maintenance of roadsides in this area and will provide detailed weed control and planting guidance as well as overall policy and procedures. This plan supports WSDOT's long-range goals of managing these roadsides to:

- Reduce maintenance costs
- Improve weed control
- Enhance roadside vegetation by providing stable, sustainable plant communities

The attached plan consists of four main sections, 1) introduction, 2) description of roadside concepts and WSDOT policies, 3) the main body of the plan document and 4) the appendices. The "**Introduction**" provides a background that has lead to the development of the plan as well as references to other pertinent guidance documents. The "**Description Section**" deals with roadside character and maintenance considerations and gives the reader an overall understanding of WSDOT roadside program. The "**Plan**" is the main body of the document and includes detailed descriptions of specific maintenance activities, policies and objectives. The "**Appendices Section**" contains prescriptions for weed control and revegetation, noxious and nuisance weed locations, locations of special maintenance areas, forms and records, and a list of local public and private stakeholders.

This plan is a dynamic document that will be developed and updated over time with input from a variety of sources. WSDOT will be requesting comments and suggestions from local private and public entities during 2007-2008 by public notifications, letters and personal communications. A working draft version of the IRVM plan will be accessible in an electronic form at http://www.wsdot.wa.gov/maintenance/vegetation/default.htm or available in hard copy upon request. Please contact Dale Luiten or James Morin at the numbers listed below for questions or comments.

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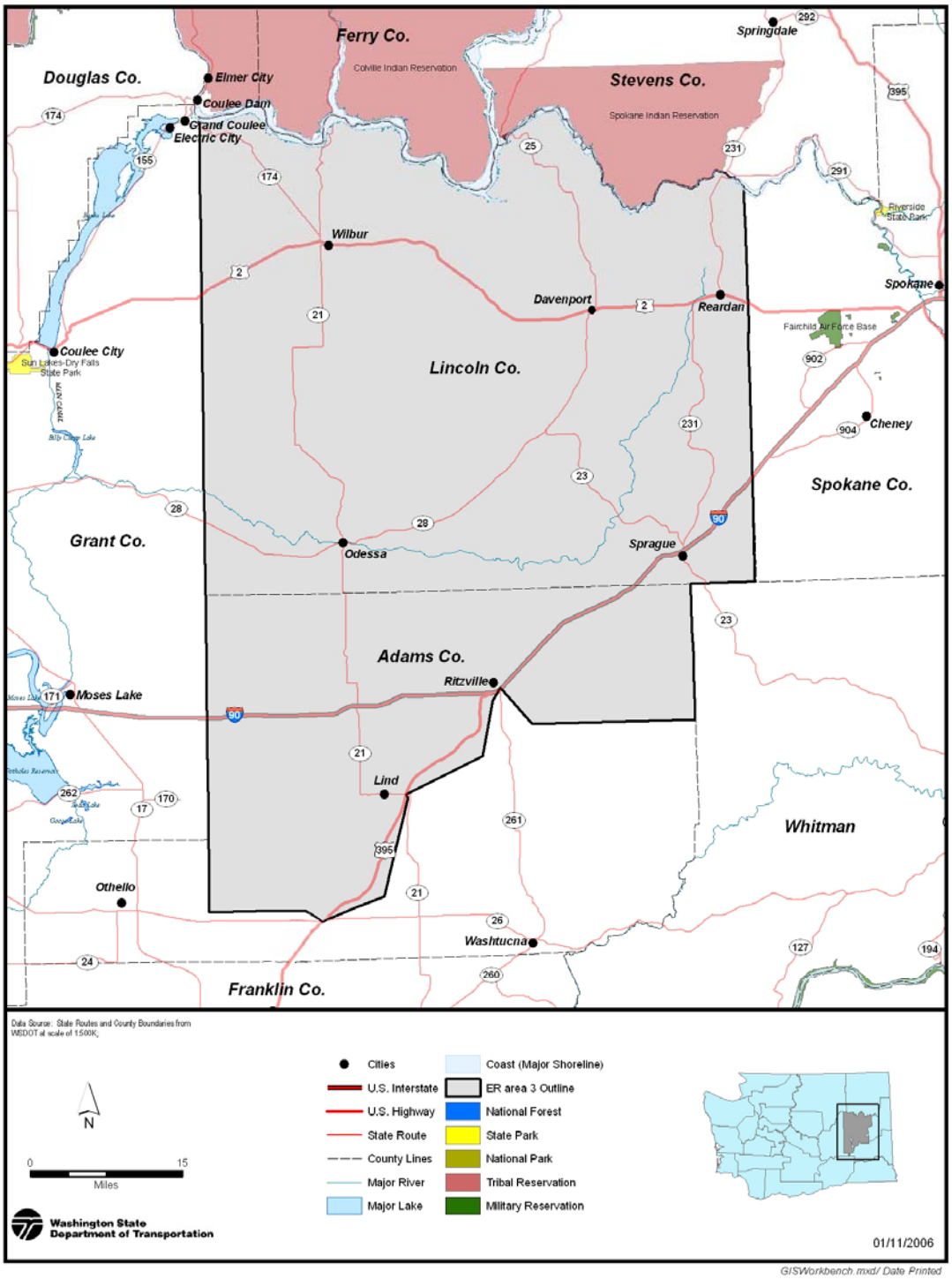

Vicinity Map
Figure 1

Program Goals

The purpose of this section is to identify the short and long term operational goals within Eastern Region, Area 3. These goals will help direct decisions that effect roadside management and the construction of roadside. These goals will be updated and evaluated on a yearly basis during the annual Winter Planning Meeting.

Long-Term Goals (2007-2011)
Long-term goals should be achievable within a 4 year period of time and have clearly stated objectives. Long-term goals may be general in nature and should provide direction for short term operational goals.

1) Eliminate Zone 1 Where Possible
2) Revegetate 15 acres of roadside yearly
3) Sensitive Areas Weed Free
4) Continue Accurately Maintain Inventory
5) Improve roadsides through working with construction/design programs

Short-Term Goals (20007-2009)
Short-term goals should be attainable within a 1-2 year period of time. Short-term goals should be specific goals with clear objectives that can be measured and reported.

1) Eliminate zone 1 throughout Area 3, except:
   a. SR 28 MP. 79 to 94 (6')
   b. Guardrail on SR's
2) Revegetate I-90 Ritzville Interchange- Approximately 10 acres
3) SR 28, MP. 101.5- approximately 1 acre
4) Identify appropriate sensitive area herbicide prescription.

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Roadside Maintenance Considerations

The primary objectives for maintenance of roadside vegetation are:

- Provide safe highway operation
- Comply with legal regulations for control of noxious weeds
- Protection of the environment

Overall WSDOT maintenance policy and procedures are defined in Chapter 6 of the WSDOT Maintenance Manual (M51-01, March 2002)
www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/MaintenanceManual.pdf

Visual Quality
All maintenance activities should be conducted in a way that minimizes visual impacts such as wide spread "brown-out" from herbicides or shattered limbs from side trimming. Roadsides should look as natural as possible throughout the year. Appropriate visual quality for roadsides throughout the state is defined in the WSDOT Roadside Classification Plan (June 1996)
www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/RCP.pdf

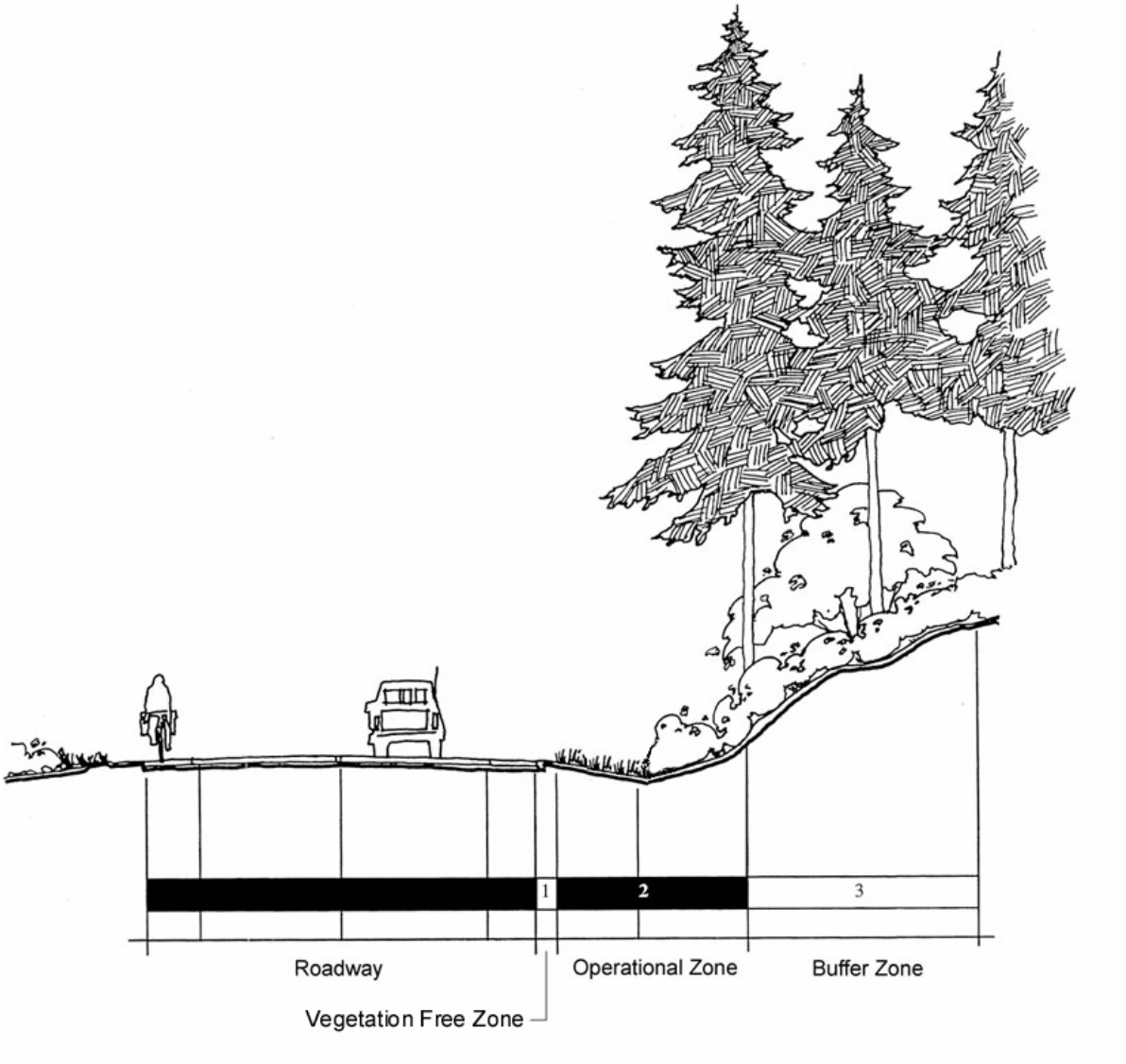
Operational Zones
WSDOT roadsides are divided into several zones for the purposes of assigning management objectives, maintenance intensities, and thresholds for triggering vegetation maintenance actions. Noxious weed species designated for control by state and county law are controlled throughout all zones. Not all maintenance zones will occur along state highways in Eastern Region, Area 3. In many cases the narrow width of the right-of-way or adjoining land-use, limits the operational zones to Zone 1 and a narrow Zone 2 only. Roadside vegetation management zones are as follows:

Zone 1 – Where necessary, a vegetation free gravel shoulder is maintained to provide for key operational and safety needs.

Zone 2 – The operational zone extends from the edge of Zone 1, or the pavement edge, to a width necessary to provide for safe errant vehicular recovery, maintain sight distance at corners and intersections, and provide for other operational, safety, and environmental functions. This zone must be free of vegetation with trunk diameter greater than 6". Where guardrail exists there is no requirement to maintain the vehicle recovery zone. The goal of vegetation management in Zone 2 is to:

- Encourage the growth of stable low growing desirable plant communities
- Control noxious weeds
- Reduce routine maintenance costs
- Reduce erosion and stabilize the roadway shoulder
- Support roadside operational and safety needs

Zone 3 – In areas with sufficient right-of-way width, a buffer or transition zone extends from Zone 2 to the right-of-way line to provide a buffer or transitional area between the highway facility and adjacent land uses. This area is maintained selectively, and to the greatest degree possible as a self-sustaining plant community, to minimize erosion as well as the growth of weeds and undesirable trees and brush.



Vegetation Free Zone
Gravel Shoulder
Maintained using mechanical and chemical methods to improve drainage and protect pavement.

Operational Zone
Low Vegetation
Maintained by mowing and IVM for sight distance, safety, and weed control.

Buffer Zone
Native/ Natural Vegetation
Maintained using IVM to encourage native self-sustaining plant communities.

Typical Roadside Vegetation Management Zones
Figure 2

Special Considerations

Herbicide Sensitive Areas
An Herbicide Sensitive Areas consist of all locations within 60' of salmon bearing streams or water body. Herbicide Sensitive Areas as described in court order of Washington Toxics Coalition vs. EPA (http://www.epa.gov/EPA-PEST/2004/March/Day-24/p6610.htm) occur throughout this maintenance area. Only approved herbicides will be used in these areas. (http://agr.wa.gov/PestFert/EnvResources/Buffers.htm#maps).

Special Maintenance Areas
This plan also defines and identifies areas with unique roadside maintenance requirements or where arrangements exist due to the surrounding land use, neighbor concerns or specific highway related functions. Special maintenance areas include highway roadsides sections with agreements for maintenance by neighbors. These areas are further defined in **Special Maintenance Areas, Section 3**.

Public Notification of Herbicide Applications
WSDOT is required by law to notify chemically sensitive individuals on file with Washington State Department of Agriculture, where the residing property abuts the highway right of way and the residence is within ½ mile of the property line. Notification to chemically sensitive individuals is accomplished by letter and/or phone conversation prior to each application. For specific herbicide application schedules, the roadside vegetation maintenance personnel can be reached at 509.324.6583.

Herbicide Safety
When applying herbicides WSDOT takes precaution to avoid any impact on human and environmental health, and to ensure herbicides do not move off target. Applications are made only by trained and licensed employees following all state and federal regulations as well as all recommendations and restrictions given on the individual product labels as approved by the US Environmental Protection Agency.

WSDOT has also conducted a risk assessment for the herbicide products and application methods used on state highways. Toxicological impacts of WSDOT practices were evaluated for human health (both operators and the general public), for aquatic ecosystems, and terrestrial wildlife. The findings of this assessment are summarized in a series of fact sheets for the individual herbicides used by WSDOT. These fact sheets can be viewed and downloaded through the Internet at: http://www.wsdot.wa.gov/biz/maintenance/htm/risk_assessment.htm, or copies may be obtained by calling the WSDOT Headquarters Maintenance Office at (360) 705-7850.

WSDOT Employee Training and Education
Perhaps the most important key to success in the implementation of this plan is the education and training of the maintenance employees responsible for delivery of the program on a day-to-day basis. This plan and the information resources it provides is intended to supplement and enhance existing training and education opportunities already in place. Training and education for employees engaged in delivery of the roadside vegetation management will include:

- Participation in an annual one-day spring review of vegetation management needs and activities from the previous year, and planning for the coming year, including the maintenance crew(s), supervisor, and area maintenance superintendent and/or assistant superintendent.
- Development of a field guide using representative photographs taken along the highway in to illustrate key aspects of IVM treatment. This will be developed over the first several years of plan implementation.
- Attendance at the annual statewide WSDOT Roadside Vegetation Management Workshops, where there is a focus on IVM tools and procedures, proper and safe use of herbicides, and lessons learned from around the state.

- Ongoing participation and communication with the public and private sector. This includes involvement in local weed board meetings, public events as well as communication with neighboring landowners and municipalities.
- Annual Winter Planning Meeting held in each Maintenance Area

Roadside Design and Construction Considerations

Highway and utility construction in many cases has a significant impact on drainage, soils and vegetation adjacent to the paved roadway. WSDOT policy and practice for restoring the operational, environmental and visual functions disturbed by construction is based on the guidelines found in the Roadside Classification Plan (RCP) (WSDOT 1996), and the Roadside Manual (WSDOT M25-30, July 2002).

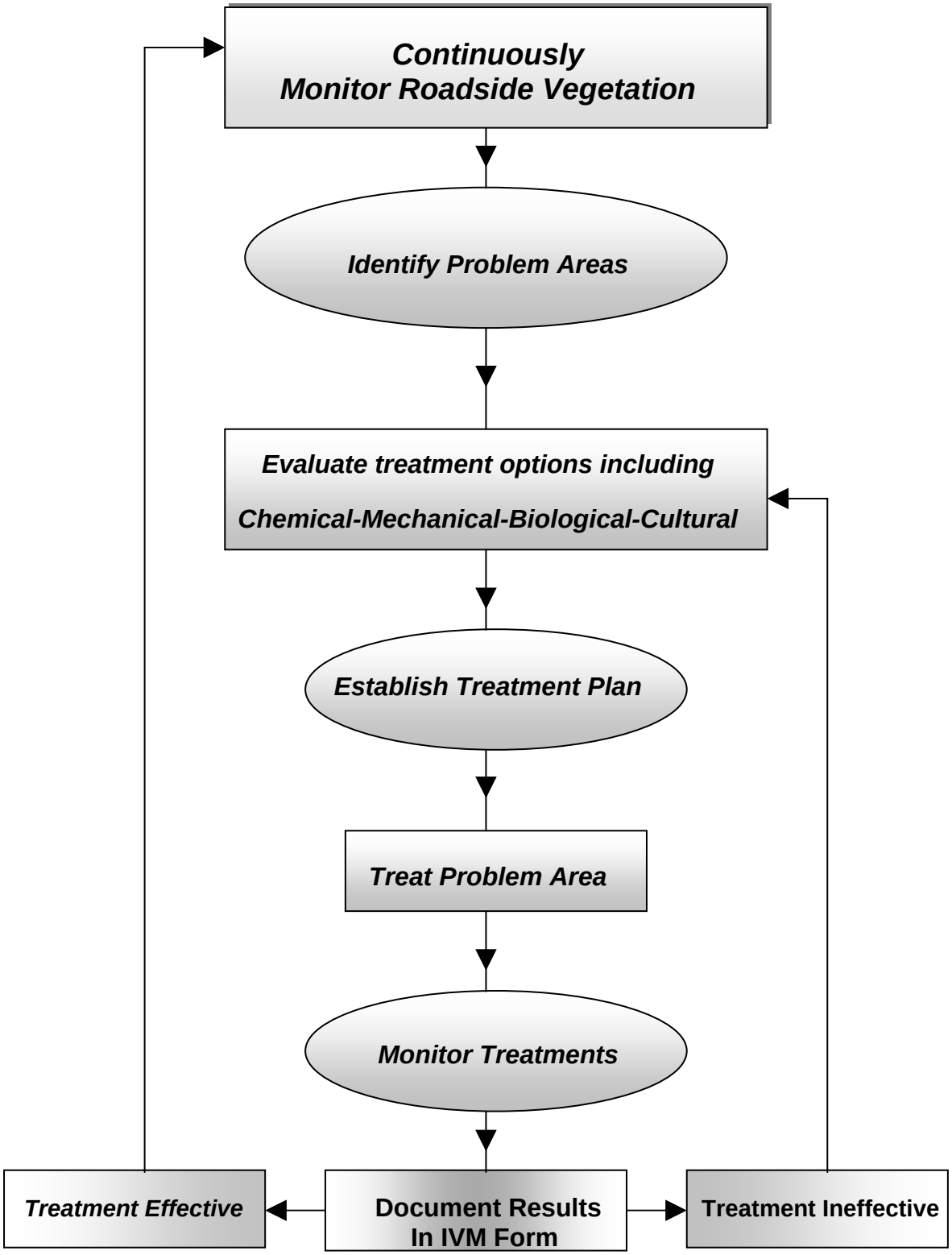
Internal agency coordination between the Design, Construction, and Maintenance programs is imperative to a comprehensive roadside vegetation management plan. A commitment to increasing communication in these areas is an important component in an ongoing effort to reduced lifecycle costs and improves roadside vegetation. This commitment has been recognized and agreed to by the regional management team.

Below is a list of design/construction projects that may have impacts to roadsides in the next 2-4 years:

- *WSDOT Eastern Region Projects Link:*
  http://www.wsdot.wa.gov/Regions/Eastern/Projects/

Below is a list of permitted utility projects that are scheduled for construction within the next 2-4 years.

- No utility projects are scheduled in this area at this time.



The IVM Decision-Making Process

Figure 3

1. ROUTINE MAINTENANCE ACTIVITIES

Roadside maintenance activities are considered routine when regular annual treatment is required because vegetative growth annually or regularly exceeds action thresholds. Typical routine maintenance activities include maintenance of Zone 1 and certain types of mowing and trimming.

1.1. Routine Shoulder Maintenance (Zone 1)

1.1.1. Policy and Objectives

Historically the edge of pavement, or Zone 1, has been maintained to be free of vegetation. This vegetation free zone was reduced to a typical width of 2' including guardrail sections throughout ER Area 3. The current Zone 1 policy in Eastern Region, Area 3 is focused on the reduction of Zone 1 where practical.

1.1.2. Action Thresholds (Zone 1):

An action threshold refers to the point at which action must be taken to control an infestation of weeds. Zone 1 will not bee treated in all areas, where needed the action thresholds for treatment of Zone 1 are listed below.

- Presence of vegetation within 2' of edge of pavement
- Sight distance limited by vegetation within Zone 1
- Special safety considerations as approved by the Area Superintendent

1.1.3. Methods (timing and procedures)

Zone 1 residual applications, where needed, will occur in the spring, typically beginning in early March. Herbicide Sensitive Areas will be maintained with a chemical that has been approved for use within this 60-foot buffer or by alternative mechanical applications. Special care will be given to these sensitive areas to insure that there are no impacts to the aquatic environment.

1.1.4. Prescriptions

See **Appendix A, Zone 1 Maintenance Prescriptions**

1.2. Hazard Tree Removal

1.2.1. Policy and Practices

Trees within the right-of-way are routinely monitored by maintenance staff. Hazard trees may be:

- Dead
- Diseased
- Leaning or
- Structurally damaged or unsound
- Shading, in some cases trees cause shading and create excessive frost problems on the roadway. In these cases canopy thinning or removal may take place to mitigate the risk.

Trees that are identified as an imminent threat to the highway or traffic will be evaluated using best horticultural judgment and removed as soon as possible.

2. INTEGRATED VEGETATION MANAGEMENT ACTIVITIES

For all vegetation management needs not addressed through routine maintenance as described above, activities are planned and carried out using the principles of Integrated Vegetation Management (IVM) and the decision making process described in Figure 3 (page 12). The goals of the IVM program are to:

- Provide effective control of noxious weeds
- Reduce maintenance life cycle costs
- Establish stable roadsides with desirable vegetation
- Preserve and enhance environmental quality

2.1. Integrated Vegetation Management Planning and Tracking Database

2.1.1. Description

One of the keys to the successful use of IVM is carrying out activities in accordance with a long-range plan and to follow up with monitoring and evaluation of treatment results. To facilitate this, IVM forms and a database have been created for statewide use by WSDOT maintenance. This system is being tested as part of the initial development of Roadside Vegetation Management Plans and will be modified and refined as technology in this area continues to develop over the coming years.

2.1.2. Sample forms

A copy of the Integrated Vegetation Management Form and Application Record are included in **Appendix E, Forms and Records**.

2.1.3. Instructions for use

Maintenance supervisors and technicians can access the IVM Record through the existing pesticide application record keeping system available from the area office. The IVM form should be used whenever evaluation of a method or product is desired. Entries should include future evaluation dates as well as a description of the site and current conditions.

2.2. Mowing Operations

2.2.1. Policy and Objectives

Mowing will be accomplished throughout the Eastern Region, Area 3 on an as needed basis. Mowing needs and prescriptions will vary by location. Mowing can be an effective form of weed control, but done incorrectly can cause damage to desirable vegetation and enhance the growing environment for unwanted weeds. It's important when conducting a mowing operation to consider a number of factors including goals, timing, target species, deck height and frequency.

2.2.2. Methods (Timing and Procedures)

Prior to conducting a mowing operation consider the following elements. Review items 1-7 below, then review and follow the appropriate prescriptions in Appendix A. There will be no mowing of desirable vegetation including grass, forbs, shrubs or woody species without prior authorization of the Maintenance Area Superintendent.

1. **Identify Goals Of Mowing Operation:** Before prescribing mowing as a preferred alternative, it is important to clearly understand what the goals are of this operation. These goals should not only be understood by the manager or decision maker, but also must be clearly communicated and understood by the operator as well. Goals may include; control of seed production, maintenance of sight distance, control of vegetation around hardware features, control of noxious or nuisance weeds in an environmental or crop sensitive area or the removal of weed skeletons for the control of newly emerging weeds.

2. **Identify Appropriate Timing:** When mowing in a stand of established dry land perennial grass, particularly native varieties, it is important to consider timing. Mowing shall not occur until after desirable grasses have reached dormancy or set seed, typically in July-August. If the goal is to control seed production of undesirable plants in an area where no desirable vegetation is present, mowing should take place as late as possible and prior to seed development. This will increase the likelihood that the target plant will not produce seed.

3. **Identify Target:** Identify target plant or plants to be controlled and ensure that the mowing operation will not spread these weed or exacerbate the existing problem. Some weeds, such as Japanese knotweed, can be easily spread through mowing. Ensure that the operator understands the target species and any desirable species in the area.

4. **Deck Height:** The mower deck height must be maintained at least 6-8 inches from the ground to reduce the likelihood of exposing bare soil. It is also important to maintain this deck height if the mowing operation will include desirable grasses. Close mowing may be allowed in special cases where no desirable species occurs and restoration work will immediately follow.

5. **Clean Mower:** Mowing can easily spread weed seed from infested areas to uninfested areas. It is important to clean the mower after each operation to ensure that mowing operation is not contributing to the spread of noxious and nuisance weeds.

6. **Consider Alternatives:** As with all IVM operations it is important to consider alternative methods. Mowing in Eastern Region, Area 3 is not a routine maintenance activity. It is a secondary form of weed control to be used on an as needed basis.

7. **Communicate:** Communication with the mower operator is critical to a successful mowing operation. The operator must understand the goals, timing, target species and desirable species before the mowing operation begins**.**

2.2.3. Prescriptions

See **Appendix A, IVM Mowing Prescriptions**

2.3. Noxious Weed Control

2.3.1. Policy and objectives

WSDOT is required to control and prevent the spread of all noxious weeds on lands owned or managed by the agency. Noxious weed control is a high priority for WSDOT as a result of this legal mandate as well as the fact that if they are left unchecked, levels of infestation can begin to spread at exponential rates from year to year. Noxious weeds are invasive, non-native plant species that can quickly dominate native plant communities and spread to other areas or regions. New infestations of noxious weeds often appear first in highway corridors after being transported from other areas by vehicles or transportation of agricultural products. Without timely control, new infestations can further spread along transportation corridors and to adjacent property. The overall cost and economic impact to the agricultural community and the health of native ecosystems can be significant.

WSDOT prioritizes weed control based on three legally defined weed species classification categories. Chapter 16-750 of the Washington Administrative Code lists weed species in classes A through C. Noxious weeds include all plants listed as class A, and those in classes B and C that are designated for control within each individual county.

Class A

Class A noxious weeds are non-native species with a limited distribution in the state. Immediate treatment of these new infestations is required by State law and is the top weed control priority to prevent spread into adjacent areas. Eastern Region, Area 3 is located primarily within Noxious Weed Region 4 and 7 http://www.nwcb.wa.gov/weed_list/weed_regions.htm

Currently there are no known Class A weeds identified within the WSDOT operating right of way in Eastern Region, Area 3.

Class B

Class B weeds are more widespread than Class A, with control mandated by law only if infestations are generally limited and the species are designated within the individual counties by the County Noxious Weed Control Boards. Containment, gradual reduction, and prevention of further spread are the chief management concerns of Class B species.
Class B noxious weeds designated for control within Lincoln and Adams Counties and currently present within WSDOT right-of-way include:

Adams County:

- Dalmatian Toadflax, (*Linaria dalmatica spp dalmatica*)
- Diffuse Knapweed, (centaurea diffusa)
- Kochia, (Kochia scoparia)
- Perennial Pepperweed, (*Lepidium latifolium*)
- Rush Skeletonweed, (*Chondrilla juncea*)
- Russian Knapweed, (Acroptilon repens)
- Spotted Knapweed, (*Centaurea biebersteinii*)
- Scotch Thistle, (*Onopordum acanthium*)
- Yellow Starthistle, (*Centaurea solstitialis*)
- Hoary Cress (Cardaria draba)

Lincoln County

- Dalmatian Toadflax, (*Linaria dalmatica spp dalmatica*)
- Diffuse Knapweed, (centaurea diffusa)
- Hoary Alyssum (Berteroa incana)
- Kochia, (Kochia scoparia)
- Musk Thistle (Carduus nutans)
- Myrtle spurge (Euphorbia myrsinites)
- Perennial Pepperweed, (*Lepidium latifolium*)
- Perennial Sowthistle (Sonchus arvensis)
- Puncturevine (Tribulus terrestris)
- Rush Skeletonweed, (*Chondrilla juncea*)
- Russian Knapweed, (Acroptilon repens)
- Spotted Knapweed, (*Centaurea biebersteinii*)
- Scotch Thistle, (*Onopordum acanthium*)
- Yellow Starthistle, (*Centaurea solstitialis*)
- Leafy spurge (Euphorbia esula)
- Longspine Sandbur (Cenchrus longispinus)

Class C

Class C noxious weeds are widely established throughout Washington or may impact the agricultural industry. Counties may require control of certain Class C weeds at their own discretion. Unless otherwise required, WSDOT classifies most Class C species as "nuisance" weeds and provides control as part of the general roadside vegetation management program. Nuisance weeds and treatment options are described in Section 2.4 of this document.

Class C noxious weeds designated for control within Adams, Lincoln counties, and are currently present within WSDOT right-of-way include:

Adams County:

- Canada Thistle (Cirsium arvense)
- Hoary Cress (Cardaria draba)
- Common Tansy (Tanacetum vulgare)
- Jointed Goatgrass (Aegilops cylindrical)

Lincoln County

- Canada Thistle (*Cirsium arvense*)
- Hoary Cress, (Cardaria draba)
- Dalmatian Toadflax, (*Linaria dalmatica spp dalmatica*)
- Babies Breath (*Gypsophila paniculata*)
- Field Bindweed (Convulvulus arvensis)
- Poison Hemlock (*Conium maculatum*)
- Hairy whitetop (Cardaria pubescens)

2.3.2. Methods

Control of noxious weed species can be very difficult; therefore it is important to incorporate the concepts of IVM. Regardless of the specific method used to control noxious weeds it is important to fully understand the life cycle of the weeds that are being controlled.

- **Chemical**: In many cases herbicides are used as a means of early control due to levels of infestations and area requiring control. Timing of herbicide treatments within the growth stage of the weed species is critical to achieving complete control of perennial species.
- **Mechanical**: Mowing, blading, disking and hand pulling are often used in conjunction with other control methods. Mowing considerations are covered in section 2.2 of this document.
- **Biological**: Biological controls are being used widely throughout WSDOT within the operating right of way. It is important to consider climate, level of infestation and available control species when selecting an appropriate biological control. It is also imperative that biocontrols be placed in an area that won't be adversely effected by mechanical or chemical control methods.
- **Revegetation/Enhancement**: A variety of other measures may be taken to promote natural vegetative competition through seeding, planting, and soil enhancement. Documentation of these methods and related success is essential to the success of long-term control measures. IVM forms will be completed for each of these sites and are located in Appendix E.

2.3.3. Action Thresholds:

The action threshold for noxious weed control is met whenever seed production of a noxious weed is imminent. WSDOT is required by state law to control and prevent the spread of all noxious weeds on WSDOT right-of-way (RCW 17.10.040). Control efforts will be initiated prior to the noxious weed producing seed.

2.3.4. Prescriptions

See **Appendix A, IVM Prescriptions, Noxious Weed Control**

2.3.5. Species Location

See **Appendix C, Noxious Weed Locations, Table 2.2**.

2.4. Nuisance Weed Control

2.4.1. Policy and objectives

Nuisance weed control, while not required by state law, provides many positive benefits to the overall condition of the roadside including:

- Stabilization of shoulders and banks
- Improved storm water treatment
- Protection and enhancement of native plant communities
- Reduces spread of weeds
- Enhances visual quality

Depending on crew availability and budget, nuisance weeds will be controlled throughout the roadsides of Eastern Region, Area 3 as part of the

overall Integrated Vegetation Management process. Priority control measures will be given to new infestations or those infestations that threaten desirable roadside vegetation. In some cases, where practical, nuisance weed infestations may be treated in conjunction with noxious weed.

For established infestations currently identified in this plan, weed populations will be contained and gradually reduced by applying appropriate vegetation management prescriptions as funds and resources are available. Control options range from manual cutting, mechanical removal, revegetation and biological control, to targeted selective herbicide application, or combinations thereof.

2.4.2. List of species currently present

Numerous Class C nuisance weeds occur throughout Eastern Region, Area 3 within WSDOT right of way that are not targeted for control. In some cases they are controlled incidentally or for site-specific reasons.

Common nuisance weed species that occur on WSDOT right of way within Eastern Region, Area 3 include:

- Cereal Rye (Secale cereale)
- Common Mullen (*Verbascum thapus*)
- China Lettuce (*Lactuca serriola*)
- Marestail (*Conyza canadensis*)
- Mustard Species
- Russian Thistle (*Salsola iberica sennen*)

2.4.3. Methods

Control measures for nuisance weeds are very similar to those of noxious weeds, see Section 2.3.2 and are dependent on available resources. Species that are wide spread are treated routinely throughout the season, often controlled incidental to noxious weeds.

2.4.4. Action Threshold For Nuisance Weed Control

Action will be taken at the discretion of the area superintendent. WSDOT is not required to control nuisance weeds, however, action is advised where funding is available and one or more of the following instances occur as a result of a nuisance weed infestation.

- Impact to adjacent land owners
- Impact to desirable vegetation
- Nuisance weed presence reduces effectiveness of noxious weed control due to height or density
- New infestation where local control is achievable

2.4.5. Prescriptions

See **Appendix A, IVM Prescriptions, Nuisance Weed Control**

2.4.6. Species Location

See **Appendix C, Nuisance Weed Locations, Table 2.4**.

2.5. Tree and Brush Control

2.5.1. Policy and Practice

Trees and brush are controlled for safety reasons including preservation of sight distance at curves and intersections, and for visibility of signs, and preventing trees with large trunk diameter from growing too close to traffic lanes.

- Native large shrub and small tree species should be allowed to grow and mature in Zones 2 and 3 and side trimmed if they encroach on site distance or other traffic operational requirements.
- Large coniferous or deciduous tree species such as Fir, Ponderosa Pine, Poplar and cottonwood left to grow in Zone 2, can reach substantial size over a relatively short period of time and should be removed when young.

2.5.2. Methods

Removal of undesirable tree and brush species is accomplished in a variety of manners including hand cutting, herbicide applications, hand pulling, mowing or combinations thereof. A thorough understanding of the species to be controlled and consideration of proper timing is important with any of these control methods to reduce damage, minimize visual impact and be cost effective. Below are specific considerations for the various control methods:

- Mowing: In many cases it is effective to mow back the majority of the existing vegetation to the out side edge of zone 2, then follow with spot mowing or herbicide treatments of undesirable species as needed, leaving desirable species to form a competitive cover.
- Hand Cutting: When possible, hand cuttings can be chipped in place and applied to the roadside as mulch where needed. In many cases this can be used to improve soils, reduce erosion and improve vegetation.
- Trimming: Consideration should be given to the visual impact of trimming as well as the effectiveness of this operation. Chemical control will not be used on deciduous trees and shrubs until after the first of September, except for cut stump treatments.
- Chemical Control: Chemical control will not be used on conifers greater than 2' in height.
- Transplanting: Whenever possible, safe and practical, seedling trees will be dug or pulled by hand and transplanted to areas where there growth will be beneficial and appropriate. Agreements may be signed to allow private citizens or groups to collect seedlings for use as transplants.
- Prescriptions: See **Appendix A**, IVM Prescriptions, Tree and Brush Control

3. SPECIAL CONSIDERATIONS

Special Maintenance Areas include any sections of roadside where there are unique maintenance requirements or existing arrangements with any external organizations. Special Maintenance Areas may include interchanges, community entrances or enhancement areas, areas maintained by cities, bicycle paths, storm water retention ponds, state parks, wellheads, environmentally sensitive areas, school zones, roadsides adjacent to individual properties with current or annual no-spray agreements and new technologies.

3.1. Herbicide Sensitive Areas

3.1.1. Policy and objectives

There are a number of herbicide sensitive areas located within the region where herbicide use will be limited to reduce potential risk to the environment. Herbicide applications made for noxious or nuisance weed control, maintenance of vegetation at the pavement edge, or applications made in combination with mechanical methods for control of undesirable trees will be made in accordance with the court order "Washington Toxics Coalition vs. EPA" http://agr.wa.gov/PestFert/EnvResources/Buffers.htm#maps

The Washington State Department of Agriculture maintains a list of individuals who have been diagnosed with Multiple Chemical Sensitivity (MCS). WSDOT is required by law to notify these individuals when making herbicide applications to roadside locations if the highway right of way is adjacent to their property and their principle residence is within one-half mile of the application. Concerned individuals can obtain further information by contacting the area maintenance office in Davenport at 509.324.6583.

3.2. Restoration Projects and Test Plots

3.2.1. Policy and objectives

Test plots are established as part of an on-going effort to refine the Integrated Vegetation Management process. Test plots will be used to evaluate revegetation techniques, herbicide selection, species selection, evaluate soil amendments and other research activities as needed. Test plot goals, locations and duration are identified and recorded in **Appendix D**.

3.2.2. Locations by Milepost, See Appendix D, Test and Restoration Plots

3.3. Adopt-a-Highway and Owner Will Maintain Agreements

3.3.1. Policy and objectives

The Adopt-a-Highway program allows private citizens, volunteer groups, and businesses an opportunity to contribute to an enhanced roadside appearance through direct partnership with WSDOT. The program improves the overall appearance of the roadside primarily through litter control, although other activities that improve the visual and environmental condition of the roadside are permitted as well including limited planting and maintenance of specific areas. Other partnership opportunities are possible through general permits and agreements. Volunteer groups that do enhancement planting on WSDOT roadsides are typically required to establish and maintain the plantings. Communities may partner with WSDOT to develop and maintain selected Community Enhancement Areas as described in the Roadside Classification Plan.

Neighboring property owners may enter into an agreement with WSDOT where they take responsibility for the vegetation management activities along the area where their property abuts state right-of-way. These "owner will maintain" agreements are established through a General Permit and are required to be renewed on an annual basis. These agreements are typically implemented in cases where a neighboring property owner desires a higher level of care in front of their business or residence, or prefers maintaining the area to avoid WSDOT herbicide applications near their home or business.

3.3.2. Locations by Milepost

Locations where partnership agreements exist for accomplishment of roadside maintenance are listed in **Appendix D, Special Maintenance Areas, Table 3.0**.

3.4. Environmentally Sensitive Areas

3.4.1. Policy and Objectives

As a state agency, WSDOT is committed to conducting its activities in accordance with the dictates of sound environmental protection practices. This includes pollution prevention, avoid, minimize and appropriately mitigate adverse environmental impacts, and to comply with all environmental laws and regulations applicable to our business and activities.

Numerous environmentally sensitive areas occur within Eastern Region, Area 3, such as lakes, streams and wetlands. Special care will be taken to avoid and minimize impacts to these resources. Herbicide applications in these areas will follow normal label requirements. Other IVM treatments that take place in these areas, such as mowing or revegetation efforts will be subject to the Regional Road Maintenance Endangered Species Act Program Guidelines.

In compliance with the Regional Road Maintenance Endangered Species Act Program Guidelines, as agreed upon with the National Marine Fisheries Service, WSDOT has identified, mapped and located in the field all highway sections within 300 feet of rivers, wetlands and water bodies.

3.4.2. Locations

Environmentally sensitive areas are identified in the field with green guideposts and identified in an area atlas. For more information on the Regional Road Maintenance ESA Program Guidelines refer to: http://www.wsdot.wa.gov/maintenance/roadside/esa.htm or contact Sandy Stephens at 360.705.7853.

3.5. Storm Water Management Facilities

3.5.1. Policy and Objectives

Storm water management facilities include bio-filtration, swales, retention ponds and infiltration ponds.

Storm water management facilities will be managed for noxious and nuisance weeds following the same guidelines mentioned in previous sections. The primary objectives, with regard to vegetation management within these facilities, are to maintain retention and detention functions to improve water quality.

3.5.2. Methods

Noxious weed control will be conducted at all storm water management facilities as necessary. Control of nuisance weeds will be coordinated with nuisance weed control along the adjacent roadside. Trees and brush should be cleared along both sides of the perimeter fencing for a width of approximately 8 feet as needed. Inlets and outfalls should be kept clear of unwanted vegetation and debris as well.

Refer to vegetation management prescriptions for specific weed, tree and brush species in Sections 1 and 2 of this document for timing and control methods.

Currently there are no active storm water management facilities in Eastern Region, Area 3.

3.6. Wetland Mitigation Sites

3.6.1. Policy and Objectives

Wetland mitigation results from unavoidable impacts to naturally occurring wetlands from highway construction. In these cases new wetlands are created on WSDOT right of way and vegetation is managed to provide environmental functions similar to those eliminated in other areas by the highway's presence.

Wetland mitigation sites are carefully monitored for up to 10 years following their creation to ensure compliance with environmental regulation. In most cases vegetation in these sites is planted and established through the construction process so the maintenance actions are not required unless noxious weeds or hazardous trees become an issue. However, it is important that maintenance be aware of the locations of wetland mitigation sites to avoid impacting the required environmental functions of the sites.

3.6.2. Locations by Milepost

See **Appendix D, Special Maintenance Areas, Table 3.0**

Eastern Region Area 3 - IVM Prescriptions

Routine Maintenance Activities

Zone 1 Maintenance - *Annual Cycle (Option A)*

Location Type	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Where needed on gravel shoulder or guardrail sections	1-3' area free of vegetation	annual herbicide application	spray truck w/ fixed nozzle mounted 18" from ground	Non-selective residual herbicide Diuron 4L @ 256 ozl (8 lbs.) **No Spray Within 60 of Water**	Spring March/April	Monitor

Zone 1 Maintenance - *Annual Cycle (Option B)*

Location Type	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Where needed on gravel shoulder or guardrail sections	1-3' area free of vegetation	annual herbicide application	spray truck w/ fixed nozzle mounted 18" from ground	Non-selective residual herbicide Diuron 4L @ 256 ozl (8lbs) Oust XP @ 3 ozd **No Spray Within 60 of Water**	Spring March/April	Monitor

Zone 1 Maintenance - *Annual Cycle (Option C)*

Location Type	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Where needed on gravel shoulder or guardrail sections	1-3' area free of vegetation	annual herbicide application	spray truck w/ fixed nozzle mounted 18" from ground	Non-selective residual herbicide with selective broadleaf herbicide SFM 75 @ 3 ozd Payload @ 8 ozd **No 60 Buffer Limitations**	Spring March/April	Monitor

Zone 1 Maintenance - *Annual Cycle (Option D)*

Location Type	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Where needed on gravel shoulder or guardrail sections	1-3' area free of vegetation	annual herbicide application	spray truck w/ fixed nozzle mounted 18" from ground	Non-selective residual herbicide with selective broadleaf herbicide Oust XP @ 3 ozd Portfolio 4F @ 10 ozl **No Spray Within 60 of Water**	Spring March/April	Monitor

Eastern Region Area 3 - IVM Prescriptions

Noxious Weed Control

Noxious Weed Control - **General Broadleaf Control** (A)

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	early season	eradication and control of listed noxious weeds.	Spot/Band	Truck mounted injection sprayer	Buctril @ 32 ozl Vista @ 20 ozl Super Spread 90 @ 32 ozl **No Spray Within 60 of Water**	Early growing season first/second flush	Reapply as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control - ***General Broadleaf Control (B)***

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	early season	Reduce seed production listed noxious weeds.	Spot/Band	sprayer	WeedDestroy @ 64 ozl Vanquish @ 32 ozl Super Spread 90 @ 32 ozl **No Spray Within 60 of Water**	Late fall	Repeat as necessary

Noxious Weed Control - ***General Broadleaf Control (C)***

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	Before seed	Reduce seed production listed noxious weeds.	Spot/Band	Truck mounted injection sprayer	Escalade @ 48 ozl Super Spread 90 @ 32 ozl **No Spray Within 60 of Water**	Early growing season	Repeat as necessary

Noxious Weed Control - ***General Broadleaf Control In Sensative/Buffer Areas (D)***

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	Before seed	Reduce seed production listed noxious weeds.	Spot/Band	Truck mounted injection sprayer	Vanquish @ 32 ozl Milestone @ 7 ozl Super Spread 90 @ 32 ozl **No 60 Buffer Limitations**	Early growing season	Repeat as necessary reduce weed competition.

Noxious Weed Control - ***Kochia (A)***

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	early season	eradication and control of listed noxious weeds.	Spot/Band	Truck mounted injection sprayer	Amine 4 @ 128 ozl Vista @ 20 ozl Super Spread 90 @ 32 ozl **No Spray Within 60 of Water** Consider reducing Amine Rate	Late spring or summer	Reapply as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control - ***Kochia (B)***

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	Before seed	Reduce seed production listed noxious weeds.	Spot/Band	Truck mounted injection sprayer	Escalade @ 48 ozl Super Spread 90 @ 32 ozl **No Spray Within 60 of Water**	Early growing season	Repeat as necessary

Noxious Weed Control - ***Yellow starthistle*** *- At Rosette Stage (A)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	spot treatment w/ herbicide	backpack sprayer or spray bottle, pickup, etc.	Tordon 22k @ 32 ozl Super Spread 90 @ 32 ozl **No Spray Within 60 of Water**	Early Season	Repeat as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control - ***Yellow starthistle*** - *At Bolting/Flowering Stage (B)*

Eastern Region Area 3 - IVM Prescriptions

Noxious Weed Control

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	spot treatment w/ herbicide	backpack sprayer or spray bottle, pickup, etc.	Tordon 22k @ 64 ozl Super Spread 90 @ 32 ozl **No Spray Within 60 of Water**	Early Season	Repeat as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control ***- Yellow starthistle -*** *At Bolting/Flowering Stage (C)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	spot treatment w/ herbicide	backpack sprayer or spray bottle, pickup, etc.	Milestone VM @ 5 ozl Super Spread 90 @ 32 ozl **No 60 Buffer Limitations**	Early Season	Repeat as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control - ***Yellow Starthistle*** *(Biological Control) (D)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	Reduce/control host plant	Biological	None	Eustenopus villosus **No 60 Buffer Limitations**	Spring Summer	Monitor and repeat or redeploy as needed

Noxious Weed Control - **Dalmation Toadflax** - Plant Emergence (A)

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	spot treatment w/ herbicide	backpack sprayer, pickup, etc.	Tordon 22k @ 32 ozl Telar XP @ 1.0 Ozd Sup Spreader MSO @ 32 ozl **No Spray Within 60 of Water**	Early growing season	Reapply as necessary. Seed and fertilize to reduce weed competition

Noxious Weed Control - **Dalmation Toadflax** - Actively Growing or Soil Residual Application (B)

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	Existing plants in fall	eradication and control of listed noxious weeds.	spot treatment w/ herbicide	backpack sprayer, pickup, etc.	Telar XP @ 3 Ozd Sup Spreader MSO @ 32 ozl **No 60 Buffer Limitations**	Fall	Reapply as necessary. Seed and fertilize to reduce weed competition

Noxious Weed Control - ***Dalmation Toadflax*** *(Biological Control) (C)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	Reduce/control host plant	Biological	None	Macinus Jenthus **No 60 Buffer Limitations**	Spring Summer	Monitor and repeat or redeploy as needed

Noxious Weed Control - ***Rush Skeletonweed*** *- Rosette Stage (A)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	spot treatment w/ herbicide	backpack sprayer, pickup, etc.	Tordon 22k @ 32 ozl Vanquish @ 16 ozl WeedDestroy @ 32 ozl Sup Spreader MSO @ 32 ozl **No Spray Within 60 of Water**	Early growing season	Reapply as necessary. Seed and fertilize to reduce weed competition.

Eastern Region Area 3 - IVM Prescriptions

Noxious Weed Control

Noxious Weed Control - ***Rush Skeletonweed*** *- Bolting/Flowering Stage (B)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	spot treatment w/ herbicide	backpack sprayer, pickup, etc.	Tordon 22k @ 64ozl Sup Spreader MSO @ 32 ozl **No Spray Within 60 of Water**	Early growing season	Reapply as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control - ***Rush Skeletonweed*** *- Bolting/Flowering Stage (C)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	spot treatment w/ herbicide	backpack sprayer, pickup, etc.	Milestone VM @ 7 ozl Sup Spreader MSO @ 32 ozl **No 60 Buffer Limitations**	Early growing season	Reapply as necessary. Seed and fertilize to reduce weed competition.

Noxious Weed Control - ***Rush Skeletonweed*** *- Biocontrol (D)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	Reduce/control host plant	Biological	None	Eriophyes chondrillae **No 60 Buffer Limitations**	Spring Summer	Monitor and repeat or redeploy as needed

Noxious Weed Control - ***Reseeded Areas*** *- (Weeds Under 2") (A)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	as soon as plants appear	eradication and control of listed noxious weeds.	spot treatment w/ herbicide	backpack sprayer, pickup, etc.	Buctril @ 16 ozl or generic equivenelt Super Spread 90 @ 16 ozl **No Spray Within 60 of Water**	Early growing season	Reapply with Vista after grass reaches 2nd leaf stage

Noxious Weed Control - ***Reseeded Areas*** *- (Weeds over 2") (A)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones	When weeds appear **After 2nd leaf break** on desirable grass	eradication and control of listed noxious weeds.	spot treatment w/ herbicide	backpack sprayer, pickup, etc.	Buctril @ 20 ozl or generic equivenelt Vista @12 ozl Super Spread 90 @ 16 ozl **No Spray Within 60 of Water**	Early growing season	Reapply as necessary.

Noxious Weed Control - ***Reseeded Areas*** *- (Pre-Treament)*

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
Revegetation Site	Apply immediately after fall planting for residual control of cheatgrass	eradication and control of listed noxious weeds.	broadcast application selective preemergence herbicide application	boom or boomless broadcast application	Milestone @ 7 ozl **No 60 Buffer Limitations**	Fall	Reapply as necessary.

Eastern Region Area 3- IVM Prescriptions

Tree and Brush Control

Tree and Brush Control - Locust, Russian Olive, Tree of Paradise, Poplar, (trees over 6 ' in height)

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
zone 2	whenever trees are likely or have potential to grow and fall on the highway	control of young trees that may impact roadside function if allowed to grow.	hand cutting, treatment of cut surface w/ herbicide chip debris in zone 2	power saws, loppers, chipper, backpack or hand-held sprayer	Backpack sprayer-undiluted mix of Garlon 3A	anytime	Seed and fertilize or plant to establish low growing native plant community.

Nuisance Weed Control

Nuisance Weed Control - Russian Thistle, China Lettus, Mares Tail

Location Type	Action Threshold	Management Goal	Method	Equipment	Materials	Timing	IVM Follow-up
all zones new or limited infestations	wherever new infestations occur (dependent on available resources)	minimize populations and prevent further spread of nuisance weeds	foliar treatment w/ herbicide	truck mounted sprayer where possible, backpack sprayer where necessary	WeedDestroy @ 64 ozl Vanquish @ 32 ozl Super Spread 90 @ 32 ozl	prior to seed	Reapply as necessary. Seed and fertilize or plant to restore native plant community.

Mowing Prescriptions

Note: Mowing should be accomplished to meet specific goals and objectives specified in the "Management Goal" section below.

Zone 2 Maintenance - Weed seed Control

Location Type	Management Goals	Method	Equipment	Timing	Planning and Follow-up
As needed in Zone 2 or 3	1) Limit noxious weed seed production 2) Improve roadside vegetation 3) Control of annual weeds 5) Improve conditions for desirable species	Mow single pass at 10-12 inches	mower, attenuator	Mowing should take place late in the growth cycle of the target plant species but prior to seed development. This will limit regrowth and potential seed production.	1) Communicate goals with operator prior to undertaking operation 2) Inspect after operation is complete to ensure target species are controlled and seeds have not developed

Zone 2 Maintenance - Crop/Sensitive Area

Location Type	Management Goals	Method	Equipment	Timing	IVM Follow-up
As needed in Zone 2 or 3	1) Limit noxious weed seed production 2) Improve roadside vegetation 3) Control of annual weeds 4) eliminate potential risk of herbicide application. 5) Improve conditions for desirable species	Mow single pass at 10-12 inches	mower, attenuator	Mowing should take place late in the growth cycle of the target plant species but prior to seed development. This will limit regrowth and potential seed production.	1) Communicate goals with operator prior to undertaking operation 2) Inspect after operation is complete to ensure target species are controlled and seeds have not developed

Zone 2 Maintenance-Safety/Sight Distance

Location Type	Management Goals	Method	Equipment	Timing	IVM Follow-up
As needed in zone 1, 2 or 3	1) Improve sight distance for safety 2) Incidental control of annual noxious weeds 3) Incidental control of seed production 5) Improve conditions for desirable species	Mow single pass at 10-12 inches	mower, attenuator	Mowing should take place as late in the growing season as possible while still maintaining good sight distance	1) Communicate goals with operator prior to undertaking operation 2) Monitor area for regrowth and adequate sight distance 3) re-mow as necessary to provide safe sight distance

Zone 2 Maintenance- Remove Overstory (old weed debris)

Location Type	Management Goals	Method	Equipment	Timing	IVM Follow-up
As needed in Zone 2 or 3	1) Remove old vegetation debris in order to control emerging weeds 2) Remove old vegetation debris that may be restricting desirable grasses 3) Improve conditions for desirable species	Mow single pass at 10-12 inches	mower, attenuator	Mowing should take place late fall/winter after grass is dormant	1) Communicate goals with operator prior to undertaking operation

Zone 2 Maintenance- New Seeding

Location Type	Management Goals	Method	Equipment	Timing	IVM Follow-up
As needed in Zone 1, 2 or 3	(1 Reduce weed pressure (2 Improve roadside vegetation (3 Eliminate weed seed source	Mow single pass maintaining deck height above desirable grass	mower, attenuator	Prior to seed set of weed species or when needed to reduce competition with desirable species	1) Communicate goals with operator prior to undertaking operation 2) Inspect after operation is complete to ensure target species are controlled

US 2 South

Planting Prescriptions

Compost Mix

	Species and Variety of Seed in Mixture by Common Name and (Botanical name)	Pounds Pure Live Seed (**PLS**) Per Acre
	Bluebunch Wheatgrass "Duffy Creek/Rock Island" *(Pseudoroegneria spicata)*	7.80
	Thickspike Wheatgrass "Schwindemar" (*Agropyron trachycaulum*)	3.00
	Crested Wheatgrass "Nordan" *(Agropyron desertorum)*	1.00
	Sandberg Bluegrass "Duffy Creek" (*Poa sandbergii*)	1.20
	Idaho Fescue "Mallory or Hepner" *(Festuca idahoensis)*	3.00
	Total Lbs PLS/Acre	**16.00**

Optional Species

	Species and Variety of Seed in Mixture by Common Name and (Botanical name)	Pounds Pure Live Seed (PLS) Per Acre
	Grass Species *Basin Wildrye* (Elymus cinereus) *Needle and Thread Grass* (Achillea millefolium) *Indian Ricegrass "Nezpar"* (Oryzopsis hymenoides) **Shrubs and Forb Species** *Rubber Rabbitbrush* (Chrysothamnus nauseosus) *Basin Big Sage* (Artemesia tridentata) *Snowy Buckwheat* (Eriogonum niveum)	

US 2 North

Planting Prescriptions

Compost Mix

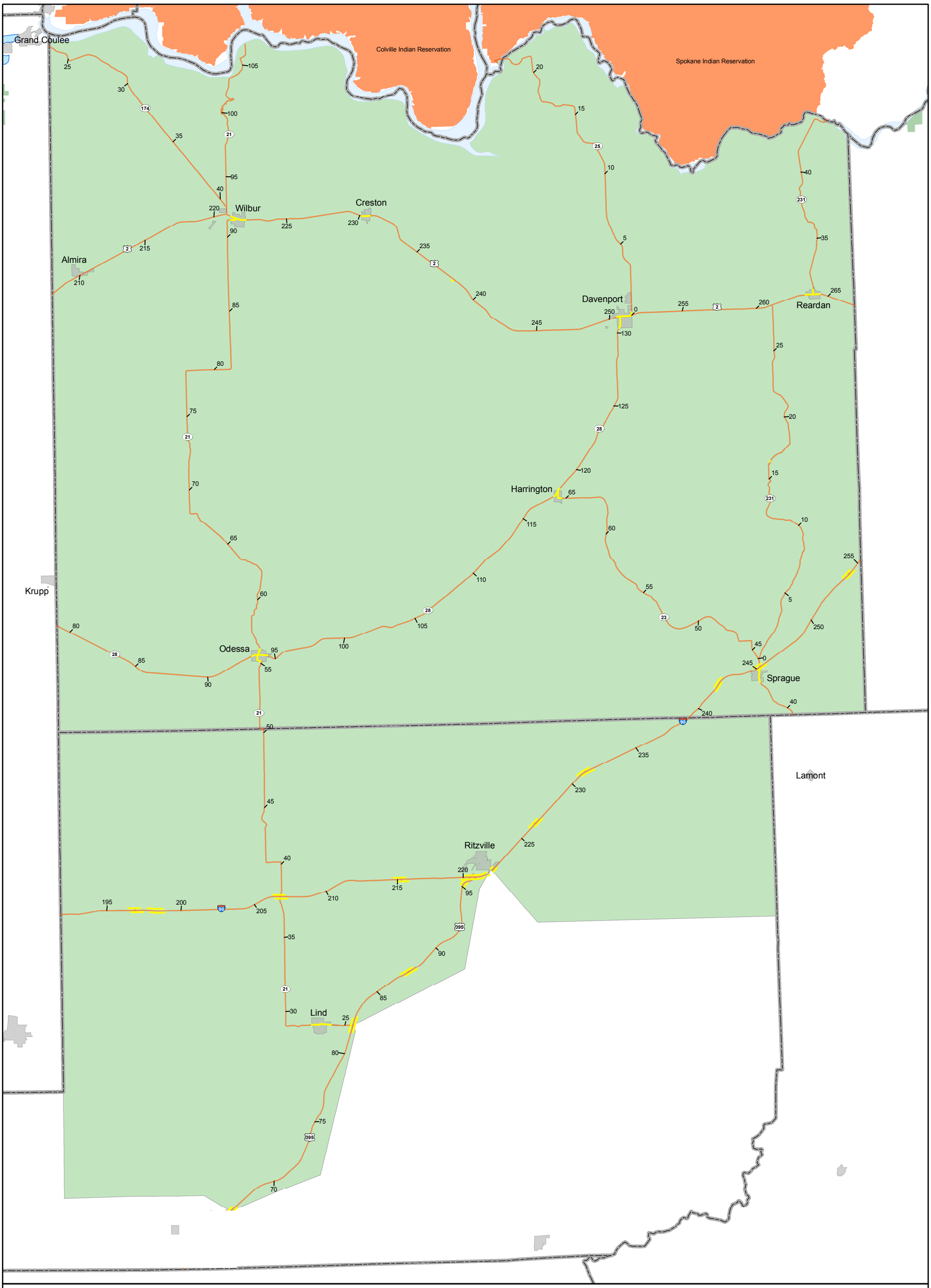
	Species and Variety of Seed in Mixture by Common Name and (Botanical name)	Pounds Pure Live Seed (**PLS**) Per Acre
	Bluebunch Wheatgrass "Anatone/Asotin/Grand Ronde" *(Pseudoroegneria spicata)*	9.40
	Crested Wheatgrass "Hycrest or Douglas" *(Agropyron desertorum)*	1.00
	Sandberg Bluegrass "Wallowa" (*Poa sandbergii*)	1.20
	Idaho Fescue "Winchester" *(Festuca idahoensis)*	3.20
	Big Squirltail "Lincoln" Elymus Multisetus	0.80
	Prairie June Grass "Zumwalt" Koeleria cristat	0.40
	Total Lbs PLS/Acre	**16.00**

Optional Species

	Species and Variety of Seed in Mixture by Common Name and (Botanical name)	Pounds Pure Live Seed (PLS) Per Acre
	Grass Species *Basin Wildrye* (Elymus cinereus) *Needle and Thread Grass* (Achillea millefolium) *Indian Ricegrass "Nezpar"* (Oryzopsis hymenoides) **Shrubs and Forb Species** *Rubber Rabbitbrush* (Chrysothamnus nauseosus) *Basin Big Sage* (Artemesia tridentata) *Snowy Buckwheat* (Eriogonum niveum)	

Herbicides Approved for Use on WSDOT Rights of Way

Chemical Name	*Product Name*	*Where Used*	*How/Why Used*	*Cautions*	*Restrictions*	*Special Notes*
2,4-D	Weedar 64 Amine 4 Veteran 720 Curtail	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	Amine formulation causes irreversible eye damage and is highly toxic to rainbow trout, all 2,4-D products pose risks of off target damage when applied near grapes and other sensitive crops	Amine formulations of 2,4-D are restricted for use within 60' of all water	Ester and acid formulations of 2,4-D may provide a good alternative to amine formulations
Aminopyralid	Milestone	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	None	None	Newly developed herbicide, introduced in 2005. Still being evaluated for effectiveness in roadside applications.
Bromacil	Krovar Hyvar	Zone 1	Nonselective pre-emergent grass and weed control	Bromacil highly mobile in soil, high potential to leach into ground water	Westside - Restricted for use Eastside - Krovar restricted for use within 60' of all water.	None
Bromoxynil	Buctril 2EC	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	Highly toxic to fresh water fish	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	Effective broadleaf weed control without grass seed surpression
Chlorsulfuron	Telar	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	None	None	Product highly effective on Canadian thistle and Horse tail
Clopyralid	Transline Curtail	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	Curtial contains 2,4-D amine which causes irreversible eye damage and is highly toxic to rainbow trout	Curtail is restricted for use within 60' of all water because of 2,4-D amine content	Transline is a clopyralid formulation without 2,4-D
Dicamba	Vanquish Veteran 720	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	Veteran 720 contains 2-4-D amine which causes irreversible eye damage and is highly toxic to rainbow trout	Veteran 720 is restricted for use within 60' of all water because of 2,4-D amine content	Vanquish is the dicamba formulation without 2,4-D
Dichlobenil	Norosac 4G Casoron	Ornamental planting beds	Pre-emergent weed control in ground cover beds. Post emergent control of grasses.	Dichlobenil is highly toxic to aquatic insects	Restricted for use within 60' of all water	Highly effective for preemergent control of unwanted weeds in ornamentals
Diflufenzopyr	Overdrive	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	None	None	None
Diuron	Karmex Direx 80 DF	Zone 1	Nonselective pre-emergent grass and weed control	Highly toxic to fish.	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	Cost effective weed control for Zone 1 in Eastern Washington
Flumioxazin	Payload	Zone 1	Nonselective pre-emergent grass and weed control	Highly toxic to estuarine invertebrates	Restricted for use within 60' of all salt water	Second year of use in zone 1, still evaluating
Fluroxypyr	Vista	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	Highly toxic to Eastern Oyster, high surface runoff potential.	None	None
Fosamine	Krenite S	Tree and brush control in Zones 2 & 3	Selective broadleaf treatment	None	None	Effective broadleaf tree control without visual impacts
Glyphosate	Roundup Rodeo Aquamaster	Zone 1, spot spray around shrub and tree plantings, aquatic weed control (Rodeo, Aquamaster)	Nonselective weed control	None	None	Aquatic version approved for use with NPDES permit for in or over water treatements
Imazapic	Plateau	All zones	Pre-emergent control of undesirable grasses in newly seeded areas	Moderate to high potential to leach into groundwater	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	Plateau is being evaluated for effectiveness particularly in former Zone 1 areas being re-established with native grasses
Imazapyr	Arsenal Habitat	Zone 1	Pre and post-emerent non-selective control of all vegetation	High surface runoff potential, high potential to leach into ground water	None	Habitat is an aquatic version of Arsenal - good alternativie to glyphosate in certain cases
Isoxaben	Gallery 75DF	Turf & Ornamental	Pre-emergent weed control in ground cover beds	High surface runoff potential	Restricted for use within 60' of all water	Works well by itself or with Ronstar
Metsulfuron-methyl	Escort	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf and conifer treatment	None	None	None
Norflurazon	Predict	Zone 1	Pre-emergent Weed control in Zone 1 and ground cover beds	High surface runoff potential	Restricted for use within 60' of all water	Good Zone 1 product but difficult to keep in suspension
Oryzalin	Oryzalin	Zone 1 Ornamental planting beds	Pre-emergent Weed control in Zone 1 and ground cover beds	Highly toxic to fish	Restricted for use within 60' of all water	Product requires additional rinsing to thoroughly remove residues from empty container
Oxadiazon	Ronstar 50 WSP	Turf & Ornamental	Pre-emergent weed control in ground cover beds	Highly toxic to fish	Restricted for use within 60' of all water, gardens, plants bearing ediable fruit	Works well by itself or with Gallery
Pendimethalin	Pendulum	Zone 1 Turf & Ornamental	Nonselective Pre-emergent grass and weed control	Highly toxic to fish, high potential for loss on erroded soil	Westside - Restricted for use. Eastside - Restricted for use within 60' of all water	None
Picloram	Tordon	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	Highly mobile in soil and plant tissue, readily absorbed through roots	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	Highly effective for conifer and broadleaf control in Eastern Washington
Pyraflufen	Edict	Nuisance and noxious weed control Zones 2 and 3	2,-4-D substitue, effective on Kochia,Russian thistle	Irreversable eye damage, highly toxic to Rainbow Trout	Restricted for use within 60' of all water	Effective with Roundup for Kochia control
Sulfentrazone	Portfolio	Zone 1	Nonselective pre-emergent grass and weed control	High surface runoff potential, high potential to leach into ground water	Westside - Restricted for use. Eastside - Restricted for use within 60' of all water	New product available for use in 2006
Sulfometuron-methyl	Oust	Zone 1	Nonselective pre/post emergent grass and weed control	None	None	None
Tebuthiuron	Spike 80DF	Zone 1	Nonselective pre-emergent grass and weed control	High surface runoff potential. High potential to leach into ground water	Westside - Restricted for use. Eastside - Restricted for use within 60' of all water	None
Triclopyr Amine	Garlon 3A	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	Irreversible eye damage	None	None
Triclopyr Ester	Garlon 4	Nuisance and noxious weed control Zones 2 and 3	Selective broadleaf treatment	Highly toxic to fish	Restricted for use within 60' of all water	Works well for invert applications



Appendix C:

Eastern Region Area 3
Special Maintenance Area
Map 1 of 1

August 2007

Appendix C *Special Maintenance Area*

Table 3.0

Definitions: *Locations area distinquishes between opposing sides of the highway by right shoulder (RS) and median shoulder (LS) in relation to direction of travel, indicated by increasing (INC) or decreasing (DEC) mile markers.*

Descriptions: *Brief explanation of special treatment required*

SR	DIRECTION	SHOULDER	BEG MP	END MP	TYPE	DESCRIPTION
002	INC	RS	237.99	238.11	Rest Area	SMA
002	Both	RS	221.19	222.21	City of Wilbur	Maintain by city
002	Both	RS	230.15	230.70	City of Creston	Maintain by city
002	Both	RS	250.54	251.55	City of Davenport	Maintain by city
002	Both	RS	263.44	264.42	City of Reardan	Maintain by city
021	Both	RS	25.93	27.30	City of Lind	Maintain by city
021	Both	RS	55.22	56.36	City of Odessa	Maintain by city
021	Both	RS	55.99	56.00	RR crossing	
021	Both	RS	91.35	91.73	City of Wilbur	Maintain by city
021	Both	RS	91.63	91.64	RR crossing	
023	Both	RS	42.66	43.45	City of Sprague	Maintain by city
023	Both	RS	65.31	66.01	City of Harrington	Maintain by city
023	Both	RS	65.49	65.50	RR crossing	
025	Both	RS	0.00	0.17	City of Davenport	Maintain by city
028	Both	RS	93.30	94.41	City of Odessa	Maintain by city
028	Both	RS	117.64	118.30	City of Harrington	Maintain by city
028	Both	RS	130.37	131.18	City of Davenport	Maintain by city
028	Both	RS	130.68	130.69	RR crossing	
090	INC	RS	196.62	197.45	Exit 196 to Deal Rd.	
090	INC	RS	197.91	198.97	Exit to Rest Area	
090	INC	RS	206.51	207.37	Exit 206 to Lind/Odessa	
090	INC	RS	214.96	215.75	Exit 215 to Paha/Packard	
090	INC	RS	219.83	221.42	Exit 220 to Ritzville/Pasco	
090	INC	RS	221.61	222.41	Exit 221 to Ritzville/Washtucna	
090	INC	RS	226.19	226.92	Exit 226 Coker Rd.	
090	INC	RS	230.88	231.82	Exit 231 Tokio Rd./W. Station	
090	INC	RS	241.62	242.36	Exit to Rest Area	
090	INC	RS	245.04	245.75	Exit 245 Sprague/Harrington	
090	INC	RS	253.72	254.48	Exit 254 to Fishtrap	
090	DEC	RS	197.25	196.43	Exit 196 to Deal Rd.	
090	DEC	RS	198.86	197.74	Exit to Rest Area	
090	DEC	RS	207.18	206.39	Exit 206 to Lind/Odessa	
090	DEC	RS	215.54	214.74	Exit 215 to Paha/Packard	
090	DEC	RS	221.64	220.13	Exit 220 to Ritzville/Pasco	
090	DEC	RS	222.28	221.84	Exit 221 Ritzville/Washtucna	

Table 3.0

Definitions: *Locations area distinquishes between opposing sides of the highway by right shoulder (RS) and median shoulder (LS) in relation to direction of travel, indicated by increasing (INC) or decreasing (DEC) mile markers.*

Descriptions: *Brief explanation of special treatment required*

SR	DIRECTION	SHOULDER	BEG MP	END MP	TYPE	DESCRIPTION
090	DEC	RS	226.67	225.88	Exit 226 Coker Rd.	
090	DEC	RS	231.57	230.62	Exit 231 Tokio Rd./W. Station	
090	DEC	RS	242.56	241.80	Exit to Rest Area	
090	DEC	RS	245.49	244.88	Exit 245 Sprague/Harrington	
090	DEC	RS	254.31	253.56	Exit 254 to Fishtrap	
231	Both	RS	16.30	16.31	RR crossing	
231	Both	RS	31.08	31.41	City of Reardan	Maintain by city
231	Both	RS	31.17	31.18	RR crossing	
395	INC	RS	65.94	66.90	Exit to Colfax/Othello	
395	INC	RS	81.69	82.78	Exit to Lind/Kahlotus	
395	INC	RS	87.21	88.12	Exit to Paha/Packard	
395	INC	RS	94.92	95.49	Exit to I-90	
395	DEC	RS	66.65	65.64	Exit to Colfax/Othello	
395	DEC	RS	82.58	81.60	Exit to Lind/Kahlotus	
395	DEC	RS	87.90	86.95	Exit to Paha/Packard	
395	DEC	RS	95.46	95.06	On Ramp	

Washington State Department of Transportation

Integrated Vegetation Management Record

Org Code	County	Date		Vegetation Management Zone(s)
455410	Walla Walla	4/19/2007		☒ Zone 1 ☒ Zone 2 ☒ Zone 3

Area: SR 125 so. MP 2.7 to MP 4

Location: PLAZA to MEADOWBROOK

Check Appropriate Boxes: ☐ NB ☐ EB ☒ SB ☐ WB

☒ Roadside ☒ Shoulder ☐ Median ☐ Landscaped Area ☐ Rest Area ☐ Park-n-Ride ☐ Interchange ☐ Bridge ☐ Ramp ☐ Mitigation Site ☐ Stormwater ☐ Yard/Stockpile

Third Party Damage: ☐ Yes

Sensitive Sites: ☐ Aquatic ☐ Wetlands

Target: ☒ Noxious Weeds ☒ Nuisance Weeds ☐ Brush/Trees ☐ Hazard Tree ☒ Other

List Target/Species: Yellow Starthistle, Canada Thistle Kochia, Puncturevine,

Reason for Action:

☒ Noxious Weeds ☒ Nuisance Weeds ☒ Fire Prevention ☒ Restore Native Veg. ☐ Zone 1 Pilot ☒ Aesthetic
☒ Site Distance ☒ Hazard Vegetation ☐ Customer Request ☒ Enhance Vegetation ☒ Slope Stabilization ☒ Other remove

Long term IVM plan (Describe goals/objectives and a step-by-step approach over time)

Get locates and mark area's that may have utilities concerns, clean and pick up all trash, mow high vegetation so we can get a good herbicide application, mark area's to save and area's to take out. Discuss any ESA concerns, Round up area that requires new vegetation, Use a mechanical method to work area's. Pack down and wet down chemfallow area to help seal the ground, repeat herbicide application as needed to maintain the area for fall seeding, get soil samples for possible fertilizer application. Goals are to meet and follow all long and short time goals of South Central Region Area 4 I.V.M. Plan.

Approximate Acres to Accomplish: 10.2

Activities		Planned date of Treatment	Actual date of Treatment
Manual	☐ Digging ☐ Pulling ☐ Planting ☐ Lopping ☐ Scalping ☒ Other remove trash	4/23/2007	
Mechanical	☐ Aerial Saw Work ☐ Tractor Brush Cutter ☐ Mower/Chem ☐ Manual Brush Cutting ☒ Tractor Mower ☒ Other	4/23/2007	
Bio-Control	☐ Insects ☐ Pathogens ☐ Parasites Type/Species		
Cultural	☐ Burning ☐ Grading ☒ Seeding ☐ Fertilizing ☐ Grazing ☐ Soil Amendment ☐ Other	10/8/2007	
Chemical	Record Number	4/27/2007	

#1 Evaluation and Date

#2 Evaluation and Date

#3 Evaluation and Date

Washington State Department of Transportation

Pesticide Application

Org. Code	County	Date of Application	Start / Finish	ICP	Stores Issue Ticket Number(s)
465320	ADAMS	5/2/2005	Start 0730 ○ AM ◉ PM Finish 1500 ○ AM ◉ PM	018A	B71415

Area
SR 395 MP 66 to MP 67 and MP ____ to MP ____ and MP ____ to MP ____ and MP ____ to MP ____

Check Appropriate Boxes:
☐ NB ☐ EB ☐ SB ☐ WB
☐ Roadside ☐ Shoulder ☐ Median
☐ Landscaped Area ☒ Rest Area ☐ Park-n-Ride
☐ Interchange ☐ Bridge ☐ Ramp
☐ Yard/Stockpile
☒ Spot Spray ☐ Blanket Spray
☐ Aquatic ☐ Wetlands

☒ Weeds ☒ Noxious Weeds ☐ Disease ☐ Brush ☐ Insects ☐ Other
Zone 1 ○ yes ○ no
List Pest(s): KNAPWEED--BROADLEAF--HATTON REST AREA

Start Weather Conditions
Temperature 48 (F/C) Wind (Direction From) NE Wind (Range) 1-2 mph(km/h)
○ Sunny ○ Broken ◉ Overcast No Rain ○ Light Scattered Showers ○ Hard Showers

Finish Weather Conditions
Temperature 62 (F/C) Wind (Direction From) SW Wind (Range) 2-4 mph(km/h)
○ Sunny ○ Broken ◉ Overcast No Rain ○ Light Scattered Showers ○ Hard Showers

Tank No.	Material Name	Material Type	EPA Reg. No.	Lot Number	Product Per Acre (hectare)	Unit	Total Daily Usage	Unit
1	Water		----------	RITZVILLE	100	Gal	300	Gal
1	Amine 4	Pesticide	34704-120	04PW43394	128	Ozl	384	Ozl
1	Transline	Pesticide	62719-73	MF06161103	6	Ozl	18	Ozl
1	Freeway	Adjuvant	----------		7	Ozl	21	Ozl

Total 3 **Acres(hectares) Treated at** 100 **gallons(liters) of spray per acre(hectare).**

Equipment Number	Tank Size	Calibration Date	Vehicle Speed	Nozzle Pressure	Width of Spray Pattern
5G36-14	1 225 2 ____ 3 ____ 4 ____ 5 ____	------	---- mph(km/h)	25 PSI(kPa)	------ Feet(meter)

☐ Handspreader ☒ Handgun ☐ Boom
☐ Backpack ☐ Fixed Nozzle ☐ Other (Specify) ____
☒ Tank Mix (Conv.) ☐ Injection ☐ Invert

Operator Name	Operator Pesticide License No.	Operator Signature	Driver Name
ARTHUR F. SANGER	36911		C SWEET

Remarks

Buffer Tank Driver's Name

Pesticide Sensitivity Registration Applies: ☐ Yes ☒ No

Contact

Division of Emergency Management (1-800-258-5990)

Additional Notes

DOT Form 540-506 EF Revised 1/2007 Distribution: OIC Maint. Operator Region File
Send OSC Copy Within 5 Days

Ozl= Ounce Dry Lv= Pound Ga= Gallon Pt=Pint Qt= Quart
g= gram kg=kilogram ml=Milliliter L= Liter

Appendix E

STAKEHOLDER LIST

City of Davenport: PO Box 26, Davenport, WA 99122
City of Wilbur: 14 Division St., Wilbur WA, 99185
City of Creston: 100 SW Creston Ave., Creston WA 99117
City of Ritzville: 216 E. Main Ave. Ritzville, WA 99169
City of Reardan: 120 Oak St. S. Reardan WA 99029
City of Sprague: 119 W. 2nd St. Sprague WA 99032
City of Harrington: 11 S. Harrington, WA 99134
City of Odessa: 21 E. 1st Ave., Odessa WA 99159
City of Almira: City Hall 19 N. Third St. 99103
Adams County Noxious Weed Control Board: Sue Sackman, 201 E. Broadway, Ritzville, WA 99169
Lincoln County Noxious Weed Control Board: Kevin Hupp, PO Box 241, Davenport, WA 99122
US Fish and Wildlife: 11103 E Montgomery Dr, Spokane Valley, WA 99206
Washington State Department of Fish and Wildlife: 315 N. Discovery Place Spokane Wa. 99216, 509-892-1001
Washington State Department of Ecology: Dani Gilbert, N. 4601 Monroe, Spokane WA 99205-1295
Washington State Parks:
Lake Roosevelt National Recreation Area: 1008 Crest Drive, Coulee Dam, Wa. 99116.

Park Headquarters 509-633-9441
Fort Spokane District Office 509-633-9441
Fort Spokane Visitor Center 509-725-2715 (summer)

Adams County Public Works: 210 W. Alder, Ritzville WA, 99169
Lincoln County Public Works: 27234 SR 25 N., Davenport WA, 99122